



**FY 94  
Battle Command Advanced Warfighting Experiments (AWEs)  
Analysis Support**

**Study  
Gist**

**PURPOSE.** Provide analytic support to Battle Command Battle Laboratory (BCBL) for investigation of their Louisiana Maneuvers (LAM) 94 issue, "Holistic Review of C4I" during FY 94 Battle Command AWEs. Specifically, provide analysis support during the Battle Command AWEs for the following objectives.

- ♦ Determine components of the relevant common picture (RCP) to support combat operations at division level.
- ♦ Develop prototype Battle Command Support System for a division commander.
- ♦ Describe impact of the RCP on the Mobile Strike Force (MSF) Commander during Prairie Warrior (PW).
- ♦ Explore 21st Century classroom concepts (secondary issue).
- ♦ Evaluate the AWE process (secondary issue).

**SCOPE OF STUDY.** The AWEs were designed within the context of two activities associated with the U.S. Army Command and General Staff College (CGSC): the Battle Command Elective (BCE), a pilot course developed jointly by BCBL and CGSC; and the PW student exercise conducted by the college in May 1994. The CGSC students were generally assigned roles of the Commander and staff of a division-sized MSF, both for the BCE experiments and in PW. Analysis support to the AWEs was provided by the Training and Doctrine Command (TRADOC) Analysis Center (TRAC) and the Army Research Institute (ARI), and AWE integration support was provided by CUBIC Applications, Inc., under a contract with BCBL.

**MAIN ASSUMPTIONS.** CGSC students:

- ♦ Have adequate knowledge and experience to envision division commander's information requirements for future warfighting.
- ♦ Have adequate opportunities through the BCE for team building and staff cohesion.
- ♦ Are fundamentally competent in tactical standing operating procedures (SOPs).
- ♦ Have an adequate level of computer literacy.

**LIMITATIONS.**

- ♦ Pilot program, learning process for experimenters and participants.
- ♦ Competing objectives and expectations - training versus experimentation.
- ♦ Limited class size (28) and classroom time (18 hours per month).
- ♦ Prototype technologies and linkages are not ideal surrogates for objective capabilities.
- ♦ Selective staffing of division functions - insights on staff process and command post (CP) design are based on opportunistic observations, not systematic investigation.

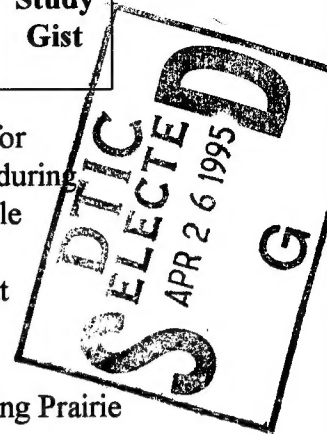
**STUDY ISSUES.**

- ♦ What are the necessary elements of information required for decisionmaking by commanders at division level?
- ♦ What is the utility of selected information technologies to improve decisionmaking and combat operations?

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- ♦ What changes may be useful in staff process and CP design?
- ♦ What are the effects of digitization enhancements on data use (interpretation, decisionmaking, cognitive processing), on shared understandings of the battlefield, and on battle tempo?
- ♦ What implications for the 21st Century Classroom were noted in the AWEs?
- ♦ What are the strengths and weaknesses of the AWE process?

#### PRINCIPAL FINDINGS.

- ♦ There is a timeless set of core information elements for the RCP, and a requirement for a tailorable component -- both rely on a comprehensive force level data base or links to multiple sources.
- ♦ VTC, electronic messaging, digital mapping, operational, administrative, and predictive tools provide unique, essential capabilities in developing and sharing the RCP.
- ♦ Digitization must be designed from a clear and detailed understanding of tactical reasoning.
- ♦ Computer literacy in the officer corps, and officer literacy in the design of digitization tools, may not be on track to implement information operations.
- ♦ Experimental design and control can enhance value of AWEs for addressing issues across doctrine, training, leader development, organization, materiel, and soldier domains.

#### RECOMMENDATIONS.

- ♦ Use BCE Commanders' Critical Information Requirements (CCIR) as a set of core elements of the division RCP.
- ♦ Continue development of a force level data base.
- ♦ Further investigate display requirements for the RCP.
- ♦ Begin working improvements in digital linkages, human dimensions, and common operating environments.
- ♦ Continue testing application of digitization to battle command.
- ♦ Further investigate computer literacy status among Army officers, and requirements for future leaders.
- ♦ Design experiments to address specific, focused issues.

IMPACT OF THE EFFORT. Primary impact - enhanced the experimental design of Prairie Warrior 95 AWE, emphasizing screening of experimental issues. Secondary impact - validated information elements considered for display in a prototype battle command decision support system for the division commander, and highlighted useful capabilities for the prototype. These capabilities are now being built into Phoenix, the next prototype. Tertiary impacts - provided insights regarding computer literacy for Force XXI.

STUDY AGENCY. TRADOC Analysis Center - Study and Analysis Center (TRAC-SAC)

STUDY DIRECTOR. Mrs. Peggy Fratzel; DSN 552-9168.

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